Applying behavioural insights to improve the messaging around the new Countryside Code

Summary

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NATURAL ENGLAND

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Report details

Natural England commission a range of reports from external contractors to provide evidence and advice to assist us in delivering our duties. The views in this report are those of the authors and do not necessarily represent those of Natural England.

Natural England has a statutory duty to produce and promote the Countryside Code, which sets out the responsibilities that visitors and land managers have in relation to the countryside. In effect, the Code is a set of behavioural outcomes – the behaviours we want the public to adopt as they spend time in nature. In practice, it is the campaigns and promotion around the Code (i.e. how it is used) that support any attitude or behaviour change, and so it is important to understand how to communicate the messages contained within the Code effectively.

Due to resource constraints, it was necessary to limit the focus of this study to three behaviours: avoiding littering, adhering to fire safety guidelines, and keeping to paths. These behaviours were selected because they emerged as being considered particularly important by our stakeholders in a survey carried out in early 2021 (see 'The Countryside Code: Stakeholder Survey – A summary of findings', NERR095). The Behavioural Insights Team was commissioned to carry out an evidence review and an online message testing experiment, focusing on these three behaviours, to inform Natural England's ongoing work to promote the Code and encourage the uptake of the behaviours contained within it.

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Executive summary

In April 2021 the refreshed Countryside Code was launched by Natural England and Natural Resources Wales. It aims to ensure everybody is welcomed and encouraged to enjoy nature, whilst helping them do that in a way that "protects and respects" nature, other visitors, and those who own and manage the land they visit.

Natural England have worked closely alongside partners and stakeholders to update the Code's content, language and tone to reflect what the public want and also meet the needs of farmers, site managers and others. Natural England are also launching a long-term Countryside Code communications campaign to increase awareness of the Code and encourage behavioural change amongst public audiences to act responsibly when visiting outdoors through 2021, and beyond.

As part of this work, Natural England engaged the Behavioural Insights Team to produce two pieces of research, which are summarised in this report:

- A rapid evidence review of the barriers and around enablers of responsible recreation behaviours
- A message testing experiment exploring the effects of different messaging around the Countryside Code

The three behaviours covered in particular include: avoiding littering, adhering to fire safety guidelines and keeping to the path.

Rapid evidence review

What combination of barriers need to be addressed?

Using the COM-B framework (Michie et al., 2011) we suggest that either:

- **There is a cognitive deficit** - many users of the countryside will not be aware of the negative impact of some of their behaviours, or indeed the relevant guidelines. This is much more likely to occur for requirements such as sticking to particular paths or lighting fires in designated areas rather than for littering - which is more widely discouraged.

- **There is a convenience gap** - where guidelines are known, how easy it is to follow them (or to adopt alternatives) will determine levels of compliance. For example, prevalence of bins will dictate littering levels and the distance to alternative paths or BBQ sites will dictate compliance with guidelines for those activities.
- **There is a motivation gap** - where adherence involves extra friction or individuals forgoing their preferences, adherence will be determined by how much individuals care about the consequences of their behaviours (either to themselves or to

others/the environment). In particular, social pressure and fear of detection are likely to be strong motivators.

The combined importance these key barriers will differ across behaviours. For instance, for littering, where awareness is high, but enforcement and accountability is low, convenience will be highly important. In contrast, for adherence to local guidelines, such as for fire safety rules, awareness of local guidance (and the reasons why adherence is important) will be key.

Different solutions for different behaviours

The most effective approaches will therefore depend on the target behaviour.

- **For littering** - non-compliance is common, easily observable (e.g. seeing where others have littered) and hard to enforce. Threats and fear are likely to be less effective than appeals to social identity. Signage works best at source for pointing people to disposal sites. Social media (and traditional advertisement placement) is appropriate for wider social identity campaigns.

- **For preventing fires and BBQs** - for one-off behaviours clear messages that focus on impacts and consequences are likely to be most effective. Wider social media based awareness campaigns would be best in seasonal windows and be highly targeted towards those more likely to visit green spaces. Dynamic traffic light systems might also work in some areas.
- **For sticking to the path** - for many, walking behaviours are habitual, preference-based and likely perceived to be harmless. Clear timely messages which tell people not to stray from the path are likely to be most effective. These seem to be most effective when combined with positive social norms and at the site of a decisions - e.g. the head of a so-called ‘social trail’ (paths made by others) or at a natural junction.

Message testing

BIT ran an online experiment with a representative sample of 2,418 adults in England on 10-12 May 2021 to test whether behaviourally-informed tweets and posters encourage responsible recreation in the countryside and nature reserves. The behaviours tested were littering, straying from paths, and having BBQs.

Overall intent to behave responsibly was high (~4 in 5 intend to behave responsibly across all measures), particularly among women, older people and those who live in rural areas. 85% would dispose of litter properly (93% non-biodegradable, 87% biodegradable); 83% would stick to paths; 81% would not have a BBQ (though concerning given severity of non-compliance).

Intent to dispose of biodegradable litter properly and to stick to pathways increased after seeing the treatment messaging. We think this was due to clear, actionable advice on what (not) to do in the text.

Highlighting “identifiable victims” (with pictures of animals harmed by litter, or plants destroyed by people going off the path) increased engagement with the linked materials, particularly for littering.

To discourage people having BBQs, the Control sign outperformed the Treatment sign. This is likely because clear symbols were better understood than text. Specifying ‘prohibited’ did not increase the threat of enforcement.

Recommendations:

- **Be specific about the behaviours you do and do not want people to do, especially for behaviours with lower baseline awareness and intent** (e.g. use phrasing such as “If the bin is full, don’t dump” rather than “Please remember to take your rubbish home to help look after the natural environment”).

- **Use behaviourally informed framing on social media.** ‘Actions’, ‘norms’ and ‘identifiable victim’ all performed well and are unlikely to backfire on recall, intentions, attitudes or sentiment. The ‘identifiable victim’ was most effective at increasing engagement with linked materials.

- **Use visual aids to compliment the text on fire safety signs** and consider specifying fines, or ‘illegality’ rather than ‘prohibited’ to emphasise enforcement. The treatment sign did not outperform the control sign in terms of perceived threat of enforcement or damage.

- **Consider introducing (and signposting) designated areas for BBQs and campfires.** 79% of those who would initially have the BBQ anyway (n=187; 8%) said they would move to a designated BBQ area if they saw one on a map. But this needs to be tested to ensure it doesn’t backfire (e.g. by increasing perceived legitimacy of having BBQs in non-designated areas also).

- **Target interventions at groups most likely to not comply.** Our findings show that young people, men, those who live in urban areas, and those who visit frequently are more likely to fail to follow the Countryside Code. This suggests that messages targeted at - and further tailored for - these groups may be disproportionately effective at reducing littering, straying from paths or setting fires. Designing other communication frames - using attractive messengers, appealing to social identity or drawing on gamification - should also be tested. However, note that in this experiment, we did not find any differences in the reactions of these key groups to our messages.

Contents

Rapid Evidence Review

Methodology

We combined a rapid evidence review with a focus group.

Rapid evidence review

We reviewed[1]:

- Published reviews and individual articles on responsible recreation
- Grey literature (from Natural England and partners)
- Wider behavioural science literature (including trials delivered by the Behavioural Insights Team (BIT))

Focus group

We also conducted one (60 min) focus group with a sample of 8 individuals using a professional research panel provider to include:

- An even split of frequent and infrequent users of the countryside
- Even gender split, 25% minority ethnic representation
- Mix of ages and geographical locations.

[1] As a rapid evidence review (rather than a systematic review) we prioritised finding the most relevant literature rather than synthesising all available evidence. We used the pearl-growing technique (Papaioannou et al. 2010), which starts with known highly relevant reviews/studies and identifies additional studies via following citation-strings and searching for the keywords used in those studies (on Google Scholar) - such as "littering", or "recreation" and "behaviour" or "interventions" - until new material found becomes less relevant. No geographical or age limits were imposed on studies, though only studies published in English were reviewed and most of the grey literature reviewed was UK focussed.

Findings: barriers and enablers

Why is this an issue?

Adherence to the Countryside Code requires improvement, but it is hard to measure. For instance, although only 4% of English recreation sites were recorded as 'not meeting the acceptable standard for litter' (Keep Britain Tidy, 2018), 30% of the English population perceive littering to be a problem in their area (DEFRA, 2019). Adherence can also become particularly important at certain times. For example, fire safety is most crucial when wildfire risk is highest, and wildlife disturbance can be particularly negative during nesting seasons.

From a behavioural perspective, there are numerous reasons why people may consciously choose not to comply with outdoor regulations or guidelines. For instance:

- **Lack of a clear link** between awareness and the recreational behaviours which impact wildlife and natural environments (Sterl et al., 2008). In addition, there is often an environmental intention-action gap, whereby pro-environmental behaviours do not always follow from pro-environmental attitudes or values.

- **Strong motivations to overcome.** For example, off-lead dog walking is often a primary reason for visiting natural areas, and many users of such spaces have a strong desire to maintain their relative freedom and independence, which makes achieving behaviour change difficult (Eagles & McCool, 2002). Walking off-trail is also often perceived as being the shorter route (Goh 2019).

- **Fear of enforcement is low.** A meta-analysis of findings from 700 studies investigating deterrence concluded that the probability of sanctions has a greater deterrent effect than their severity (Rupp, 2008). This is problem given that it appears England residents perceive the threat of enforcement for behaviours such as littering to be low. For example in 2011, 84% of Londoners thought it is likely that there will be no consequences to dropping litter in a public place (Keep Britain Tidy, 2011).

However, there are also numerous other barriers to responsible recreation behaviours which go beyond individuals' conscious decisions or intentions. To better understand these, we use the COM-B model of behaviour (Michie et al., 2011).

There are wide-ranging barriers to responsible recreation

Capability barriers:

- **Lack of understanding:** users may be unaware of the consequences of their behaviours (Sterl et al. 2008) and not be familiar with the guidelines - such as where fires are allowed (focus group).

- **Remembering:** users need to remember to bring waste bags with them when planning their visit (focus group).
- **Finding alternatives:** users may not be aware of the best route to take once they realise they should not be going a certain way.
- **Convenience:** users will take the routes which are easiest and be less likely to follow guidelines if they take more mental or physical effort (Goh 2019).

Motivation barriers:

- **Habits:** users may use natural areas frequently and have ingrained habits - e.g. follow the same (inappropriate) routes regularly.
- **Preferences:** off-path walking is often the more highly desired option (Eagles & McCool, 2002), e.g. due to greater freedom, or to avoid others (focus group).
- **Incentives:** low perceived positive (Lawhon et al. 2013) or negative consequences for compliance lowers intentions (Rupp 2008).
- **Culture:** in some places cleaning litter is seen as less desirable or well-regarded than in others (Ong & Sovacool 2012).

Opportunity barriers:

- **Prompts:** lack of prompts in the environment with locally relevant information, such as fire safety signs (Saunders et al. 2019).
- **Time requirements:** users often need to go further to find designated BBQ areas stick to path and to drop their waste in designated bins (focus group).
- **Facilities:** greater the distance to (empty) bins, the higher likelihood of littering (Al-Mosa et al. 2017).
- **The behaviours of others:** people follow others in their group, including when misbehaving (focus group).
- **Social norms:** users often see other users breaking the rules (e.g. litter on the floor or off-path 'social trails') and this is perceived as implicit permission to do the same – 'broken windows effect' (Lui et al 2019).

What comms nudges work to reduce littering?

Motivation:

- **Social norms:** Social norms interventions have been found to have a positive effect on both self-reported waste prevention behaviour (Corsini et al. 2018) and

observed littering behaviours, both in laboratory settings and in the field (de Kort et al. 2008).

- **Social undesirability:** Australia Environmental Protection Agency's *'Tosser'* campaigns and the New South Wales *'If it's not in the Bin it's On You'* campaigns have been associated with positive shifts in awareness of the impacts of littering, intentions and social undesirability).

- **Social identity:** Tapping into pride and positive social identities can be a strong motivator. This was demonstrated in the famous 'Don't Mess with Texas' campaign which is thought to have reduced highway litter by 72%. Similarly, the recent *Don't Mess With Croydon* campaign has been associated with a reduction in over 5000 incidents per year in the borough (Ager & Lawrence, 2018).

Figure 1. A roadside sign from the famous 'don't mess with Texas' campaign. This reads 'Don't Mess with Texas: Up to $2000 fine for littering'.

- **Feeling watched:** An experimental field study with University students found that the presence of images of eyes has a positive effect on reducing littering – in this case of the leaflets with the eye design on them, possibly because the 'eye' images heighten the feeling of being watched (Bateson et al. 2013).

- **Sanctions:** The Love Essex campaign combined pro-social slogans such as 'littering: it's not cool' with messaging highlighting the risk of being fined on posters, buses, fast-food packaging, and promotions on social media. Although not tested experimentally, it has been associated with a 66% drop in fast-food litter and a 41% drop in in litter overall (HMG Litter Strategy for England, 2017).

Awareness and ease:

- **Timely prompts:** Providing timely prompts at disposal locations has been associated with positive littering outcomes. This includes providing visual prompts above bins (Sussman & Gifford, 2013), publicly displayed banners (Liu & Sibley

2004) or persuasive verbal prompts delivered at disposal locations (de Kort et al. 2008) (Case study 1).

Case study 1: Harnessing pride to reduce littering

The Australia Environmental Protection Agency (2018) tested four different communication strategies for encouraging cigarette butt binning (see Table 1 for key copy from the communications).

Message focus	Message tested	Number of sites at which message was displayed	Binning rate (%)
Pride and ownership	YOUR SPACE own it, love it	7	64
Enforcement	$80 fine or a few steps to the bin?	6	62
Positive social norms	Thanks for binning your butts!	11	58
Directional cues	Bin your butt here	14	53

Table 1. Summary of key copy from communications tested by the Australia Environmental Protection Agency, the number of sites at which each message was displayed and the effectiveness of these messages, in terms of observed binning rate.

These were all placed in timely locations across 38 disposal sites and were compared to baselines in each site and 6 matched control sites.

Signage which focussed on building a sense of pride and ownership had the biggest effect on cigarette butt binning behaviour, achieving a 64% binning rate. This was measured using weekly observation of butt binning by trained observers at each site.

Enforcement was the next most effective (62% binning rate) followed by positive social norming (58%) and signage with directions to bins (53%).

What comms nudges work to improve fire safety?

Awareness:

- **Use 'slash symbols'.** As long as the slash does not cover the main image, these signs are effective where park warnings include injunctions not to do particular

things. Solid red slashes are more effective than translucent or partial slashes (Murray et al. 1998).

- **Dynamic risk:** Where the level of risk is changeable, dynamic features (e.g. a 3 tier traffic light system) that change with the seasons or conditions have been suggested (Saunders et al. 2019). Electric fire safety signs have been installed in Australia for this purpose (Fire and Emergency NZ, 2017). In another context, variable 'traffic-light' signs introduced by Hampshire County Council appears to have reduced dog attacks on grazing livestock (Heath 2017).

Figure 2. Example of dynamic risk communication from California.

- **Targeted social media messages:** Social media campaigns for fire safety messaging are suggested to be more effective during particular 'windows' of time, such when bushfires are in the news, or when risk is very high. It is also recommended that specific audiences, such as those using campaign websites, should be targeted (Fire and Emergency NZ, 2017).

Motivation:

- **Fear can be effective**: In another US field experiment in a Californian national park, (Cohn et al. 2008) found that a verbal fear appeal led to significantly higher fire safety compliance than a verbal moral appeal (Case study 2).

- **Avoid advertising negative social norms:** Although not tested directly in a fire safety context, it is well-known that advertising negative norms can reduce compliance in national parks. For instance, a well-known study in a US national park found that messages highlighting the problem of past visitors taking fossilised

wood actually backfired by increasing visitors' theft (Cialdini et al. 2006)[2]. In fact, the author of this seminal study, Cialdini calls highlighting negative social norms 'the big mistake' of communications intended to increase compliance with a guideline or rule.

Case study 2: Using fear to boost fire compliance

A US field experiment examined the effects of message type (fear vs moral messaging) and source (verbal or signage) on fire compliance in a Californian national park (Cohn et al. 2008). The experiment with 263 visitors in total, used six treatment groups and one control spread out across two 'experimental picnic zones' on randomly selected days.

The treatment groups received verbal messages (delivered by U.S. Department of Agriculture Forest Service volunteers) about either a) awareness of sanctions (fear) or b) altruistic messages (moral). The sign included a simple "no fire" message.

They found that both verbal messages had positive effects (relative to a no-message control) on compliance with fire regulations - boosting 'superior compliance' (e.g. not leaving flames unattended and using provided grills) from 45% to 66% and 69% respectively.

This meant the **fear appeal had slightly higher compliance than the moral appeal** and this effect was significant.

The physical signs saying "no fire" did not boost compliance significantly alone but did increase the effect of the verbal messages when used in combination.

[2] The negative social norms message from Cialidini et al. (2006) which backfired – leading to an increase in the undesirable behaviour: 'Many past visitors have removed petrified wood from the park, changing the state of the Petrified Forest'

What comms nudges work to keep people to the path?

Figure 3. Paths on Tunbridge Wells Common. Example of 'social trails'.

Awareness and ease:

- **Tell people what they should not do:** An experimental field trial with UK hikers (Winter 2006) found that a negatively framed message – "please don't go off the path" was 3 times more effective than a positive framed message – "please stay on the path" (Case study 3).
- **Use big signs:** In general, larger signs are more effective at promoting pro-environmental behaviours (Sussman & Gifford 2012).
- **Prompt at the moment of action:** Signs placed closer in proximity to where an undesirable behaviour occurs (such as near where people often move off the hiking trail) also have been found to be more effective at preventing people from engaging with those undesirable behaviours (Bradford & McIntyre, 2007).

Motivation:

- **Emphasise positive social norms:** In another part of the previous study on hiking trail signs (Winter 2006) emphasising the good behaviour - that the vast majority of past visitors keep to the path - was more effective than emphasising the undesirable behaviour - that many past visitors have gone off the path (case study 3).
- **Attribute cause to individuals:** In one study, the addition of an attribution message such as "Your feet have trampled the vegetation on this island. Please stay on the main wood-chipped trail" was more effective than just the instruction to say on the trail (Bradford & McIntyre, 2007).

- **Highlight consequences:** An experimental US field trial (Girasek 2019) found that signs (at the water's edge and site entrance) alerting park visitors that water entry is illegal and finable, was associated with significantly reduced risk-taking, compared to previous signs emphasising the danger.

Figure 4. 'No swimming' sign located at the water's edge.

Case study 3: Using social norms to keep on the path

An experimental study by Winter (2006) tested the effects of different types of social norms and framing in influencing hikers to keep to the path in a US park. It randomly allocated 4 different versions of the sign[3], plus a control (no additional sign) across 20

[3] The four versions of the sign that were tested were as follows:

1. Please **don't go off** the established paths and trails, in order to protect the Sequoias and natural vegetation in this park.
2. Many **past visitors have gone off** the established paths and trails, changing the natural state of the Sequoias and vegetation in this park.
3. Please **stay on** the established paths and trails, in order to protect the Sequoias and natural vegetation in this park.
4. The vast majority of **past visitors have stayed on** the established paths and trails, helping to preserve the natural state of the Sequoias and vegetation in this park.

randomly selected times for video observation, with a total sample of 2,897 people using the paths.

It found two key insights:

- Emphasising the good behaviour - that the vast majority of past visitors keep to the path - was more effective than emphasising the undesirable behaviour - that many past visitors have gone off the path (11.8% users going off-trail vs 18.7%)

- A negatively framed message – “please don’t go off the path” - which described the behaviour that should not be done was 3 times more effective than a positively framed message – “please stay on the path” – which described the preferred behaviour (5.1% users going off-trail vs 15.9%).

Conclusions

What solutions should be prioritised?

In response to these key barriers, we have identified three promising areas for solutions:

- **Achieve greater awareness of guidelines and the reasons behind them** - with **clear, timely information,** such as signage in the areas where undesirable behaviours are prevalent and examples of positive behaviours or alternatives.

- **Provide more convenient ways to adhere to guidelines** - **with facilities/tools (e.g. bins, plastic bags, alternatives)** and by reducing the cognitive effort required to understand the guidelines (e.g., clearer instructions and cues).

- **Ensure people are sufficiently motivated** - through **prompts to increase salience**, reminders, and **communicating future benefits** (e.g. about the positive impact for an area). Stronger motivational change requires more intensive changes to social identity, the addition of **social incentives** (such as social comparison and signalling) or the increased threat of detection and sanctions.

The combined importance the key barriers will differ across behaviours. For instance, for littering, where awareness is high, but enforcement and accountability is low, convenience will be highly important. In contrast, for locally-specific guidelines, such as fire safety guidelines, awareness of local guidelines (and the reasons behind them) will be more important.

We also outline general **principles for effective communications** in the Appendix.

Message testing

Overview

BIT worked with Natural England to **test whether behaviourally-informed tweets and posters encourage responsible recreation in the countryside and nature reserves.** We collected responses from an online representative sample of 2,418 adults in England on 10-12 May 2021 (Table 2). The median time spent completing the survey was 8 minutes 34 seconds. The survey also collected data for all respondents on education, income, smoking status, urban/rural/suburban, frequency of countryside visits and familiarity with the Countryside Code.

Category	Proportion of sample
Gender	50% women
Age	13% 18-24 55% 25-54 33% 55+
Ethnicity	85% White 8% Asian 3% Black 4% Mixed / other
Region	36% South & East 27% North 21% Midlands 16% London
Geography	31% Urban 49% Suburban 21% Rural

Table 2. Summary of characteristics of the sample of 2,418 adults in England that took part in the message testing experiment.

Note on interpreting the results:

- The sample is 'online' representative - it doesn't capture the digitally excluded, or people otherwise not inclined to complete online surveys.
- Just because people say in an online experiment that they would do something, this doesn't mean they always will in real life. We therefore interpret stated intent as a likely upper bound of real behaviour.
- When we examine differences by subgroups (e.g. gender, ethnicity), we only do so when the underlying sample size remains large enough to draw robust inferences from.

Summary of the experiment: testing tweets, signs and taglines

Experiment 1: Tweets

We assessed how attitudes and intentions around (i) littering and (ii) people straying from designated footpaths varied across 5 arms (4 arms with two targeted tweets and one baseline arm with no tweets). We also tested recall of these tweets.

Experimental arm	Tweet message	Number of participants
1	Baseline (no tweet)	224
2	Control	547
3	Victim	553
4	Action	587
5	Norm	507

Table 3. Breakdown of the number of research participants exposed to different messages in tweets.

Experiment 2: Signs

We assessed how attitudes and intentions around open fires, BBQ's and discarding of cigarettes in the countryside and nature reserves varied across three arms (two with a fire safety sign and one with no sign). We also tested recall of these signs.

Experimental arm	Sign	Number of participants
1	Baseline (no sign)	224
2	Control	1,093
3	Treatment	1,101

Table 4. Breakdown of the number of research participants exposed to different signs.

Experiment 3: Taglines

We tested 3 versions of taglines for Natural England to elicit how people felt about them.

Experimental arm	Tagline	Number of participants
1	Control	819
2	Personal	799
3	Actions	800

Table 5. Breakdown of the number of research participants exposed to different taglines.

Notes

- In experiment 1 and 2, the baseline group remained the same throughout the experiment.
- Participants who were not in the baseline group were re-randomised between experiments 1 and 2, and all participants were re-randomised for experiment 3.
- The type of material tested was decided collaboratively (between Natural England and BIT staff), based upon perceived usefulness for upcoming Natural England campaigns, and what existing Natural England materials could act as a control (recent Natural England social media content for littering and paths, and new Natural England signage for fire safety).

- The number of experimental variations was constrained by the maximum sample size achievable in the budget.
- Data collected by BIT on 10-12 May 2021.

Experiment 1: Tweets

Methodology

Participants were randomly assigned to see either no materials (n = 224), or one of four versions of the two tweets. Participants also saw the tweets as they answered intent and sentiment (but not recall) questions. Data collected by BIT on 10-12 May 2021.

Figure 5. Examples of tweets shown to the 547 people in the control group in experimental arm 2. Median initial viewing time: 19 seconds.

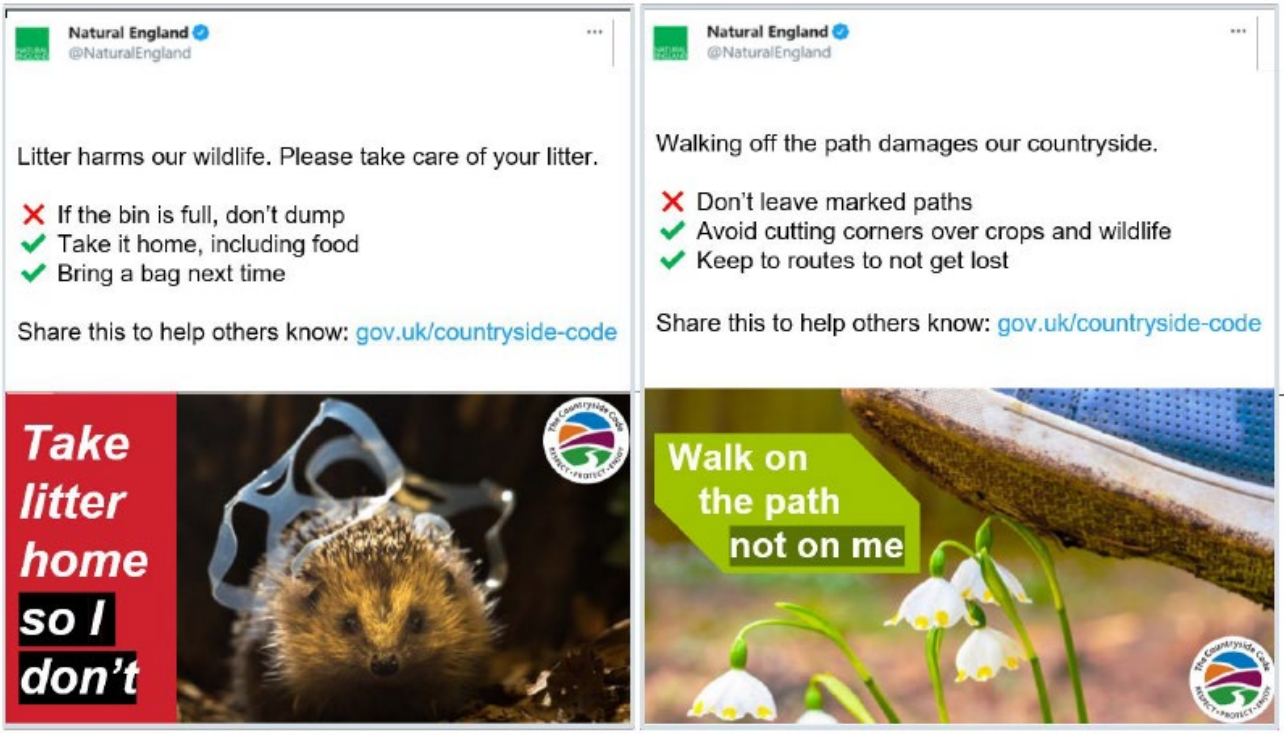

Figure 6. Examples of 'victim' tweets shown to the 553 people in experimental arm 3. Median initial viewing time: 22 seconds.

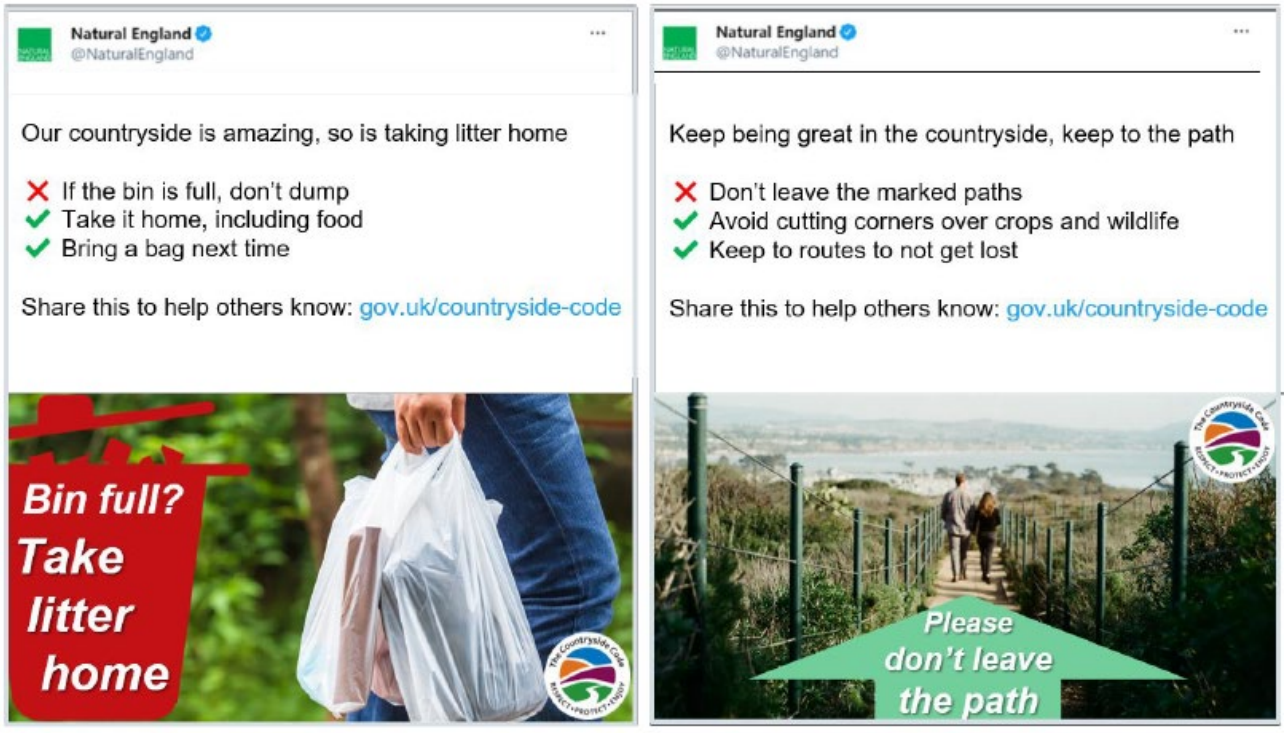

Figure 7. Examples of 'action' tweets shown to the 587 people in experimental arm 4. Median initial viewing time: 21 seconds.

Figure 8. Examples of 'norm' tweets shown to the 507 people in experimental arm 5. Median initial viewing time: 21 seconds.

Key findings: littering

All tweets generally encourage more favourable behaviour compared to the baseline (Table 6). ~5 percentage points fewer people would dispose of biodegradable litter properly (vs non-biodegradable waste).

	Control (n=547)	Victim (n=553)	Action (n=587)	Norm (n=507)	Baseline (n=224)
Overall litter tweet intent score (%)	75	76	77	76	72
% who would dispose of their non-biodegradable litter properly[4]	90	93	64	93	94
% who would dispose of their biodegradable litter properly	86	88	88	88	84

[4] Disposing of litter properly means they would take their litter home or to the nearest bin

	Control (n=547)	Victim (n=553)	Action (n=587)	Norm (n=507)	Baseline (n=224)
% who would pick up other people's litter	74	76	72	70	68
% who would not leave litter next to a full bin	88	89	89	88	81
% who think others would dispose of their non-biodegradable litter properly	63	60	64	66	61
% who think others would dispose of their biodegradable litter properly	49	49	52	54	43

Table 6. The influence of exposure to different tweets on litter-related behavioural intentions and opinions. Baseline intent to not litter is high, but the tweets still help. Full scenarios are available in Appendix 1. Green shading identifies statistically significant highest (or joint highest) value within row. Data collected by BIT on 10-12 May 2021.

After seeing treatment tweets, people are less accepting of leaving rubbish next to a full bin (vs the control and baseline) (Table 7). ~1 in 3 think that is acceptable to leave biodegradable litter, this is higher after seeing the control tweets (backfire).

	Control (n=547)	Victim (n=553)	Action (n=587)	Norm (n=507)	Baseline (n=224)
% who think it's OK to leave non-biodegradable rubbish in the countryside	16	16	15	15	15
% who think it's OK to leave biodegradable rubbish in the countryside	34	31	31	29	31
% who think it's OK to leave a pile of rubbish next to a full bin	35	26	28	25	33

Table 7. The influence of exposure to different tweets on opinions related to litter. Green shading identifies statistically significantly highest (or joint highest) value within row. Data collected by BIT on 10-12 May 2021.

People respond to clear and actionable phrasing of messages that focus on specific behaviours. The treatment messages performed better than the control (Figure 10).

Figure 9. Tweets tested in this experiment. The treatment messages are shown on the left hand side; the control message is shown on the right hand side.

Discussion:

- Overall, 3 in 10 people admitted they would litter in some shape or form.
- People were more likely to say they would leave behind biodegradable waste (such as food) compared to non-biodegradable waste (such as packaging).
- This is likely because littering biodegradable waste was deemed to be twice as acceptable than non-biodegradable waste (31% vs 16%). This was likely because people thought that biodegradable waste can be food for animals or would naturally decompose, and is therefore okay to leave behind.
- Whilst all tweets reduced intent to litter compared to this baseline, our treatment communications were more effective at making people less likely to litter food and dump litter by a bin, because they corrected people's (mis)perceptions about acceptability of these behaviours.
- These results showcase the importance of being as specific as possible about (un)desirable behaviours in communications.

Key findings: paths

Clear, actionable phrasing matters most for specific behaviours with low baseline compliance. The treatment tweets increased participants' stated intent to avoid taking shortcuts (Table 8).

	Control (n=547)	Victim (n=553)	Action (n=587)	Norm (n=507)	Baseline (N=224)
% who would stay on the footpath or allowed trails in the scenario[5]	82	84	83	83	82
% who would definitely not take a shortcut even if they can see others have taken it before	37	46	43	42	35
% who would definitely not take a shortcut even if their friends want to take it	41	49	46	46	36
% who would definitely not take a shortcut even if the field had a closed gate with signs stating no access	63	65	70	66	65
% who would definitely not take a shortcut even if there are animals in the field that they want to walk through	57	60	64	62	58
% who would definitely not take a shortcut even in any of the above situations	29	36	35	34	28

Table 8. The influence of exposure to different tweets on behavioural intentions related to paths. Green shading identifies statistically significantly highest (or joint highest) value within row. Data collected by BIT on 10-12 May 2021.

[5] Scenario: 'Imagine that you are on a walk through the countryside with some friends. You are currently walking along a designated footpath. You see your destination a couple of fields away, but it is in the opposite direction to the footpath that you are currently on.' Full scenario available in Appendix 2.

Again, people respond to more clear and actionable phrasing of messages that focuses on specific behaviours. The treatment messages (Figure 11) outperformed the control.

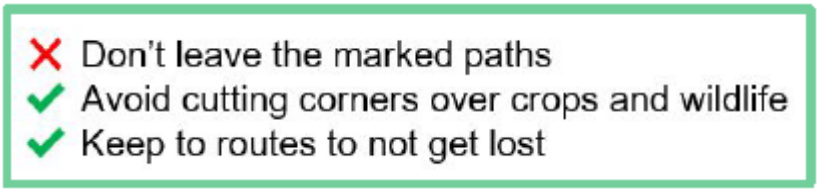

Figure 10. The treatment tweets tested in this experiment.

Discussion:

- As many as 7 in 10 people admitted they may stray from the path when asked about realistic scenarios. This appears to be driven by social influence in situations where they could see others have left the path or their friends want to do so.
- This is almost the exact opposite of what we found when people were asked about the general principle of 'keeping to the path', with 8 in 10 saying they would stick to it. This suggests that whilst people recognise desirability of following the paths, this belief is not strongly held and/or is deemed situationally contingent. Indeed, it appears that many people feel that leaving the path is acceptable, for instance to reach beautiful areas. Some don't believe it could cause any real damage, suggesting they don't fully understand the rationale for the rule.
- The treatment materials did strongly increase people's stated intent to keep to paths, when considering these realistic scenarios involving shortcuts. Again, this was likely because the treatment tweets provided specific behavioural instructions (e.g. around not cutting corners over crops and wildlife).

Key findings: all tweets

Participants perceived all tweets positively but found the 'Victim' and 'Norm' tweets easiest to understand (Table 9).

	Control (n=547)	Victim (n=553)	Action (n=587)	Norm (n=507)
Overall tweet sentiment score[6] (%)	71	72	71	71
% who think the tweets are easy to understand	83	88	84	85
% who do not think the tweets are annoying	68	69	68	70
% who think the tweets will help reduce the litter in the countryside	67	67	67	68
% who think the tweets will help people to stick to the footpaths	68	66	65	67
% who are likely to share the tweet with their social network	71	70	71	67

Table 9. Participants' opinions about the tweets and their behavioural intentions. Green shading identifies statistically significantly highest (or joint highest) value within row. Data collected by BIT on 10-12 May 2021.

~1 in 5 clicked on at least one of the tweets. People engaged the most with the Control and Victim tweets, as measured by click throughs. The Victim litter tweet performed the best: 5 percentage points more people clicked on the 'Victim' litter tweet (Figure 12) compared to the other tweets. Clicks on the tweets did not vary by age, gender, ethnicity, geography or frequency of countryside visit.

	Control (n=547)	Victim (n=553)	Action (n=587)	Norm (n=507)
% who clicked on at least one of the tweets	20	24	17	17

[6] The overall 'tweet sentiment' is the combined (average) proportion of positive responses to the five survey questions related to respondents' opinions and feeling towards the tweets - which we define as their 'sentiment' towards them.

	Control (n=547)	Victim (n=553)	Action (n=587)	Norm (n=507)
% who clicked on the litter tweet	12	17	12	10
% who clicked on the paths tweet	14	16	11	12

Table 10. Engagement with different tweets. Green shading identifies statistically significantly highest (or join highest) value within row. Data collected by BIT on 10-12 May 2021.

Figure 11. The 'Victim' litter tweet.

Discussion:

- Our treatment tweets - Victim and Norm - were easiest to understand. As mentioned in our recommendations, this suggests that Natural England can try these types of different frames and angles, without concern about potential backlash.

- Looking at engagement (click through rate), the Victim tweet performed best, and in particular this was the case for littering (which generated a 5 percentage point increase in click through compared to the other litter tweets).
- Only 1 in 4 recalled that the tweets were from Natural England, suggesting more signposting to the messenger might be needed. On average, 1 in 2 participants remembered the tagline - and this was slightly higher for the treatment group, despite the use of hashtag with the tagline in the control tweets.
- About 1 in 3 participants did not recall the main message of the tweets. As always, this highlights the need for clear and salient messaging, but may be explained by some participants inattention online.

Experiment 2: Signs

Methodology

Participants who were not in the baseline group of 224 people were then re-randomised to see one of two signs (Figure 13). Participants also saw the signs as they answered intent and sentiment (but not recall) questions. Data was collected by BIT on 10-12 May 2021.

Figure 12. The two signs that participants who were not in the baseline group were shown. The sign on the left is the control sign, which was shown to 1,093 participants. The sign on the right is the treatment sign, which was shown to 1,101 participants. The median initial viewing time for both signs was 8 seconds.

Key findings

10 percentage points more people would not have a BBQ after seeing either the control or treatment sign. 8 in 10 of those who would initially have a BBQ would move to a designated BBQ area if one existed.

79% of those who would initially have the BBQ anyway (n = 187) said they would move to a designated BBQ area if they saw one on a map.

“Australia's nature reserves have designated areas with stone/concrete barbecue sites. Maybe we should follow their lead.”

	Control (n=1,093)	Treatment (n=1,101)	Baseline (n=224)
Overall sign intent score (%)	66	65	54
% who would not have a BBQ when they were not allowed	82	82	72
% who think others would have a BBQ when they were not allowed	48	47	42
% who would act to try to stop others from having a BBQ	67	67	47

Table 11. Behavioural intentions following exposure to the control and treatment signs, compared to the baseline group who were not shown either sign. Green shading identifies statistically significantly highest (or joint highest) value within row. Data collected by BIT on 10-12 May 2021.

Discussion

As many as 1 in 5 people admitted they would have BBQs in areas where it is forbidden. This is particularly concerning given the high severity of not adhering to BBQ guidelines (e.g. risk of forest fire).

Exposure to either the control or treatment sign significantly reduces people’s stated intent to have BBQs in these areas by 10 percentage points. This is a strong evidence for the need for locally relevant fire and BBQ signage.

With the control sign, there was higher recall of messages and increased perceive risk of fire. But this did not translate into a higher perceived likelihood of damage, or

intent to avoid BBQs - highlighting the fact that changing awareness does not always change intentions.

The use of 'prohibited' on the treatment sign did not have the intended effect of increasing the perceived enforcement threat. However, it is possible that other wording (such as 'illegal' or highlighting the potential fine) might be more effective.

Behavioural intentions

Participants who would act favourably across all measured intentions tended to be older, female, live in rural areas, and visit the countryside rarely (Table 12).

		% who said they would not leave either types of litter (biodegradable or non-biodegradable) in the countryside	% who said they would stay on the footpath or allowed trails in the scenario provided	% who would not have a BBQ when they were not allowed
All participants		85	83	81
Age	Under 25 (n=308)	70	66	67
	25 to 54 (n=1,321)	82	80	79
	55 and over (n=789)	95	94	90
Gender	Male (n=1,203)	82	80	78
	Female (n=1,204)	87	86	84
Geography	Urban (n=740)	77	74	73
	Suburban (n=1,176)	87	85	84
	Rural (n=502)	90	91	87

		% who said they would not leave either types of litter (biodegradable or non-biodegradable) in the countryside	% who said they would stay on the footpath or allowed trails in the scenario provided	% who would not have a BBQ when they were not allowed
Visit the countryside[7]	Frequently (n=851)	74	73	72
	Rarely (n=1,065)	90	87	86

Table 12. Reported intentions for each of the three behaviours tested in the experiments. Green cells indicate statistically significantly highest (or joint highest) value within category. Data collected by BIT on 10-12 May 2021.

Taglines

Methodology

All participants were then randomly assigned to see one of three taglines (Table 13).

Tagline type	Tagline content	Number of participants shown the tagline
Control	Respect everyone Protect the environment Enjoy the outdoors	819

[7] Of those who do not live in rural areas. Frequent visits are classified as “once every two weeks” or more.

Tagline type	Tagline content	Number of participants shown the tagline
Personal	Respect others you see Protect the nature you love Enjoy your great outdoors	799
Action	Clean up your litter Keep to paths Be careful with BBQs	800

Table 13. The three taglines tested in the experiment. The control is the existing tagline for the Countryside Code.

Key findings

The 'Control' and 'Personal' taglines outperformed 'Action' on most measures of sentiment (Table 14).

	Control	Personal	Action
Overall tagline sentiment score (%)	84	84	81
% who said that they can relate to the message	84	83	80
% who said that the message captures how they feel about the countryside	82	83	80
% who said that the message captures how they think people should behave in the countryside	84	85	81
% who said that they think it's a good motto for Natural England	84	84	81

Table 14. Sentiments and opinions in response to the taglines tested in the experiment. Green shading identifies statistically significantly highest (or joint highest) value within row. Data collected by BIT on 10-12 May 2021.

The suggested improvements to the taglines centred around focusing the messages on the ‘countryside’ or ‘wildlife’, and to move beyond a three line catchphrase.

All statements were easy to understand:

- “I think it's easy to understand and relatable” - Control
- “It is a good clear message which people will understand.” - Personal
- “It gives out a strong message of the main points to adhere to when in the countryside” - Action

Some felt the 3 statements were too domineering:

- “I think people are sick to death of these 3 word things Hands, face, space; catch it bin it kill it, etc. ad nauseum. Why not just have respect for all 3.”
- “The 3 statements gave a feeling of the Covid message, which people are being blase about. They may just ignore it as fed up being preached to.”
- “Too much like covid slogans. As if the same ad agency has been given a load more of our money and just regurgitated the same old two-word nagging lines.”

There was also some tagline specific constructive feedback:

- Control
    - “Respect everyone is a little ambiguous in the sense that you shouldn't let just anything go.”
    - “Not sure Protect Everyone conveys the correct message... we should also be mentioning wildlife.”
    - “Protect everyone is a silly notion because they might be littering and having BBQs! Better to say Protect and Respect Wildlife”
- Personal
    - “Not sure what ‘respect others you see’ refers to”
    - “I feel it is just empty words it doesn't tell people how.”
    - “Respect others you see. This is quite vague and won’t mean much to most people.”
- Action
    - “It's good to point out the 'Don'ts' but also important to emphasise what you can do to enjoy the countryside”
    - “It might be nice to add a line that says to enjoy the countryside rather than it just being ‘don'ts’”
    - “There is no mention of protecting nature and the environment”

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Appendix 1: Designing effective communications

Summary of BIT's 'BI Principles for communications' report produced for Natural England as part of this project.

Communications must first attract the target audience's attention

When our attention is drawn to something, we are more likely to act on it. However, we are constantly overwhelmed by excessive information and our attention span is limited. Even when attention is attracted, people will often only spend fractions of a second looking at communications so they should be designed to **draw attention to the most important bits**.

Use colour, contrast, bold font or border key messages to attract attention. Adding an image or an infographic that reinforces your message can help make information more accessible. As with text, images should be simple and easy to understand. Ensure any images depict the desired behaviours (avoid showing undesirable behaviours!). *Tip: Faces and eyes often attract our gaze. And, if appropriate, use humour!*

Use an influential messenger - the person who sends a given communication can affect how it is received. Messages from well-known and well-regarded people, or those with specific expertise, are perceived as more credible and lead to increased engagement. However, someone who is a credible messenger for one audience may not be for another audience, so understanding your audience is key. *Tip: We are more responsive to messengers 'like us' i.e. people that are more relatable or representative of the target audience.*

Make messages timely - our priorities and moods are greatly affected by the context around us, meaning we attend to and respond to messages differently depending on when and where we see them. Messages should be targeted at the moment of action or choice e.g. at times of the year when people are most likely to access the countryside and at access points, such as car parks or gates. *Tip: We are particularly likely to change our behaviour during transitions when habits are disrupted or not yet formed - such as moving house.*

To be effective, content must engage your target audience

Once our attention is drawn to the communications material, **the message needs to quickly and effectively convey the crucial information**. As mentioned, even when attention is attracted, people will often only spend fractions of a second looking at communications - the message must be designed with this in mind.

Simplify wherever possible - small changes to simplify the message can have a disproportionately large effect on behaviour. Remember to: remove all non-essential content, keep language simple by using plain English, make sure that the key message is presented early and provide a single point of contact for responses. *Tip: Include key messages in the first sentence or subject line / headings.*

Make information personalised - we are more likely to engage with content that is relevant to us. Messages should be made relevant for the target audience e.g. tailoring to members of a particular community or group. Keep in mind that the information you want to convey might not be the information they want to read so provide something that is useful or interesting to the target audience e.g. local walking routes. *Tip: Incentives alongside messages can also boost engagement e.g. vouchers for local businesses.*

Use positive narratives. Messages of guilt or "should not" are common when it comes to the environment - however, unless the desired behaviour is easy, we tend to react against these messages and dismiss or avoid the issue. This “reactance” might even cause us to take action that is contrary to what is being asked. Narratives and storytelling can soften these messages. *Tip: We are particularly responsive to personal stories - however, audiences will vary in their response to different storytellers (or “messengers”).*

Information alone is not sufficient to motivate behaviour change

Often, people know what the right thing to do is and intend to do it, but do not always behave accordingly. This is called the **intention-behaviour gap**. After attracting attention and conveying relevant information to the target audience, effective communications must translate this into behaviour change, **reducing the intention-behaviour gap by motivating action**.

Help people to take action by ensuring the target behaviour is clear and easy to understand. Consider the positioning of information - stating a clear “call-to-action” at the top of communications can be effective. Where possible, try to tie behaviours to existing actions or routines. *Tip: If you want people to carry out multiple actions, clearly outline the individual actions with simple text and, where appropriate, images.*

Harness the power of social networks. We are heavily influenced by what those around us do. Highlighting social norms, either by telling people that *most people* behave in the

desired way or using dynamic norms to demonstrate that people are *increasingly* behaving in the desired way. We are particularly influenced by those 'like us', so tailor communications to specific social identities. *Tip: Avoid inadvertently reinforcing negative social norms by highlighting through text or images how common the undesirable behaviour is.*

Promote self-efficacy. We are more likely to take action when we are targeted personally, we feel we are able to take the necessary steps or the consequences will affect us personally. To encourage action, highlight the ease and effectiveness of personal action. Actions framed as personal choice and responsibility, rather than telling someone what to do, can be particularly effective. *Tip: Associate personal choice and responsibility with positive emotions, such as pride.*

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